

PASTURE AND HAYLAND SUITABILITY GROUPS
For Major Land Resource Areas:
(107, 109, 112, 113, 115, 116, 131, & 134)

The sections on Climate and Major Uses will apply to all pasture groups and will not be repeated in the individual pasture group description.

CLIMATE:

Missouri's continental climate allows the weather to change often, both day to day and season to season. Cold air moves down from Canada, warm moist air moves up from the Gulf of Mexico and dry air moves in from the west. This mixing of weather patterns can cause rapid and often violent weather changes. Winters can be cold and the summers hot, but prolonged cold or hot periods, without relief, are unusual.

Annual precipitation ranges from about 32 inches in the northwest to nearly 48 inches in the Bootheel region. In the west and north the winters are comparatively dry while in the southeast more moisture occurs during fall, winter and early spring. In winter, snow fall is common, averaging about 20 inches in the north and 10 inches in the southern part. Freezing rain occurs an average of twice a year. It is unusual for snow or ice to remain more than a week or two.

Temperatures over 100⁰ F. are rare but do occur throughout the state. In the north, days with temperatures over 90⁰ F. can be expected for 40 to 50 days, while in the west and southeast, the prospect will be nearer 65 to 75 days. On the average, there are temperatures below 0⁰ F. about 3 to 5 days in the north and 1 to 3 days in the southern counties. There are about 110 days in the north and nearer 70 days in the southeast, with temperatures below 32⁰.

Frost free days range from less than 180 in the northwest to more than 210 in the southeast. The growing season will be somewhat longer than this, since growth will not be stopped with light freezes. The last killing frosts will occur about April 10th in the north and about March 15th in the southeast. The first killing frost in the fall should be expected by October 25th in the north and about November 20th in the southeast. The higher elevations of the Ozark uplift and cold air drainage into valleys, can cause locally shorter growing seasons. In addition, each plant species will be injured to a varying degree by the same freezing event, so different kinds of pasture could have unequal growing seasons.

MAJOR USES:

Grazing for Domestic Livestock:

Missouri has about 12.6 million acres of grassland which composes roughly 1/3 of the states total land area. These grassland acres are the basis for the vigorous grazing livestock industry that comprises a major portion of Missouri's agricultural economy. Missouri ranks second among the states in the production of; hay, calves, beef cows and all cattle. The state is also second in the number of cattle and beef cow operations. Dairy product and cattle make up over 30 percent of Missouri's farm sales. In addition, substantial numbers of sheep, goats and horses are sustained by grazing Missouri's grassland.

Annual production varies greatly by Pasture Suitability Group and plant species. Estimated yields, of total above ground production are listed by species, in thousands of pounds, per acre, for each PSG. (see Table 1) In general, potential production is limited by available soil moisture. Groups receiving additional moisture will be most productive, but may be limiting in the kind of forage plants that they can produce. Groups that do not keep or make available the moisture received, will be less productive, and will be limited in the kinds of forage plants that they can grow.

Productivity and/or species composition not only varies because of pasture group, but also because of the condition (health) of the field or field part. When inventorying a pasture resource it is necessary to first know the pasture groups present and then determine the condition of these groups so that we can plan proper management.

Wildlife Habitat:

Management of grassland to produce both livestock forage and wildlife food and cover are compatible uses of the grassland resource. When properly managed, pasture and hayland systems can provide valuable wildlife habitat to a diversity of species. Grassland are often bisected by wooded drainages and they usually border cropland or woodland providing a great deal of edge effect. Water developed for livestock, will also provide permanent watering sites for a wide range of wildlife.

Nesting, brooding, wintering and escape cover for a large number of wildlife species are available on properly managed grassland. Top level management for livestock production will generally, also increase the value for wildlife. Pastures in a healthy condition, have a more diverse plant population of the better quality forage species including legumes and the more palatable grasses. To maintain plants with high forage quality and promote optimum production, requires management that leaves sufficient residual vegetation to carry on a rapid level of photosynthesis. Plant diversity and adequate amounts of residual vegetation are characteristic to a good livestock/forage system, and both are important to wildlife habitat.

Hydrologic Characteristics:

Water is the principal factor limiting forage production on grassland. Therefore, as much precipitation as possible must be retained where it falls in order to obtain maximum forage production as well as reduce flooding of downstream areas. This can best be accomplished by maintaining grassland cover in as healthy a condition as possible. The soils of pasture groups have inherent hydrologic properties. These properties, in conjunction with the amount of herbaceous vegetation present, greatly influence the amount of water that is lost from a site.

The importance of both water quality and quantity is starting to be recognized, yet this precious resource continues to be squandered. Grassland is an economical user of water, its demand for growth is frugal compared to other vegetative land uses. Grasslands do an excellent job of filtering out impurities as water moves into the aquifer or through the watershed. If properly managed, grassland watersheds will provide an abundant supply of clean water for any future needs.

Recreation and Natural Beauty:

The open spaces associated with grassland provide broad vistas that contribute to the natural beauty of Missouri. The few remaining native grasslands with their many forbs, flowering from early spring to late fall, and the various autumn coloration of the grasses, shrubs and trees are especially unique.

Recreation opportunities are diverse and appeal to a variety of interests. Horseback riding, hiking, bird-watching, camping, picnicking, rock-hounding and hunting are just some of the recreation activities available on the grasslands. As populations grow, these open spaces will become more attractive as recreation sites. Recreation could create a source of income in an area that would not otherwise be productive.

For soil limitations to recreation development including camp areas, picnic areas, playgrounds, paths and trails, consult the Soil Survey Interpretations.

**Pasture and Hayland Suitability Groups
Index to Groups**

WCB - Wet Clayey Bottom	CyU - Clayey Upland
WCU - Wet Clayey Upland	GrU - Gravelly Upland
WLB - Wet Loamy Bottom	MDU - Moderately Deep Upland
WLO - Wet Loamy Overflow	ShU - Shallow Upland
LyO - Loamy Overflow	LyP - Loamy Pan
SyO - Sandy Overflow	WtP - Wet Pan
GrO - Gravelly Overflow	GrP - Gravelly Pan
LyU - Loamy Upland	GNS - Generally Not Suited

**Pasture and Hayland Suitability Groups
Index to Soils**

phsg	soilname	phsg	soilname	phsg	soilname
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WCB	ACADIA	WLB	ATKINS	WLB	BLACKOAR
WLO	ACKMORE	WCB	AUXVASSE	WLO	BLAKE
CyU	ADAIR	WtP	BADO	WCB	BLASE
CyU	ADCO	LyP	BAHNER	WCB	BLENCOE
WLB	ADLER	WCB	BALDWIN	GrO	BLOOMSDALE
GrU	AGNOS	ShU	BALLTOWN	CyU	BLUELICK
WCB	AHOLT	MDU	BARCO	MDU	BLUEYE
WCB	ALBATON	CyU	BARDEN	MDU	BOLIVAR
WCB	ALLEMANDS	MDU	BARDLEY	WCB	BOOKER
WCB	ALLIGATOR	GNS	BARDLEY	LyO	BOSKET
CyU	ALSUP	ShU	BASEHOR	WCB	BOWDRE
GrU	ALSUP	MDU	BATES	LyU	BRANDON
LyU	ALVIN	WLB	BEAUCOUP	LyU	BRANSON
WLB	AMAGON	CyU	BEEBONT	CyU	BRAZILTON
WLO	AMANA	GrU	BEEBONT	WCB	BREMER
LyO	ANKENY	WCU	BELINDA	CyU	BREVATOR
WCB	ARBELA	WLO	BELKNAP	LyU	BRITWATER
CyU	ARISPE	MDU	BENDAVIS	CyU	BRONAUGH
CyU	ARMSTER	MDU	BENDER	LyO	BROSELEY
GrU	ARMSTER	GNS	BENDER	GrU	BRUSSELS
CyU	ARMSTRONG	GrU	BETHESDA	GNS	BRUSSELS
LyO	ASHTON	LyO	BEULAH	CyU	BUCKLICK
LyU	ASKEW	CyU	BEVIER	SyO	BUCKNEY

Pasture and Hayland Suitability Groups Index to Soils

phsg	soilname	phsg	soilname	phsg	soilname
LyU	BUNCETON	SyO	CREVASSE	LyO	GLADDEN
MDU	CABOOL	LyU	CRIDER	WCU	GLENSTED
WCB	CAIRO	WCB	CROWLEY	CyU	GORIN
WLO	CALEB	LyO	DAMERON	MDU	GOSPORT
WLB	CALHOUN	WCB	DARWIN	GrU	GOSS
CyU	CALWOODS	LyU	DEEPWATER	LyO	GRABLE
SyO	CANALOU~1	LyP	DELAUSSUS	CyU	GREENTON
MDU	CANEYVILLE	SyO	DIEHLSTADT~1	CyU	GRUNDY
WLO	CANTRIL	WLO	DOCKERY	LyP	GUNLOCK
LyP	CAPTINA	GrU	DONIPHAN	WCU	HAIG
WCB	CARLOW	LyO	DUBBS	GrU	HAILEY
LyO	CARR	WLO	DUNDEE	GNS	HAILEY
WLO	CARUTHERSVILLE	WCB	DUNNING	GNS	HAMBURG
WCU	CARYTOWN	WLO	DUPO	WCB	HARTVILLE
MDU	CATOOSA	WCU	EDINA	CyU	HARTWELL
GrO	CEDARGAP	WCU	EDINBURG	LyU	HARVESTER
WtP	CELT	GrU	ELDON	LyP	HATTON
WCB	CHARITON	GrU	ELDORADO	LyO	HAYMOND
WCU	CHAUNCEY	LyO	ELK	WLO	HAYNIE
WCB	CHEQUEST	GrO	ELSAH	WLB	HAYTI
CyU	CHEROKEE	MDU	ERAM	LyO	HEALING
MDU	CHILHOWIE	LyO	EUDORA	ShU	HECTOR
LyO	CLAIBORNE	WLO	EUDORA	WLO	HEPLER
SyO	CLANA	GNS	EUSTIS~1	CyU	HERRICK
MDU	CLARESON	WLB	EXCELLO	LyU	HIGGINSVILLE
WCU	CLARINDA	LyU	EXIRA	LyP	HILDEBRECHT
WtP	CLARKSFORK	WLO	FALAYA	LyP	HOBERG
GrU	CLARKSVILLE	WLO	FARRENBURG	LyP	HOBSON
GNS	CLARKSVILLE	WLO	FATIMA	SyO	HODGE
LyO	CLEORA	WLO	FISHPOT	LyU	HOLSTEIN
CyU	CLINTON	WLO	FLORIS	WLO	HONTAS
WLB	COLAND	LyP	FOLEY~1	WLO	HOOPESTON
WLO	COLLINS	WCB	FORESTDALE	WCB	HOULKA
ShU	COLLINSVILLE	WLB	FOUNTAIN	WCB	HUMESTON
WLB	COLO	LyU	FOURCHE	LyO	HUNTINGTON
WLO	COMMERCE	WLO	FREEBURG	LyO	HUNTSVILLE
LyU	CONTRARY	WtP	FRIENDLY	WCB	HURST
WLO	CONVENT	LyU	GARA	LyU	IDA
WCB	COOTER~1	ShU	GASCONADE	MDU	IRONDALE
LyO	COTTER	GNS	GASCONADE	LyU	IVA
CyU	COTTON	MDU	GATEWOOD	WCB	JACKPORT
GrU	COULSTONE	GNS	GATEWOOD	LyU	JASPER
GNS	COULSTONE	GrU	GEPP	LyO	JEMERSON
CyU	COURTOIS	GNS	GEPP	LyP	JONCA
GrU	COURTOIS	WtP	GERALD	LyU	JOY
ShU	COWETA	WLB	GIDEON	WLO	JUDSON
GrU	CRAIG	WCB	GIFFORD	LyO	KAINTUCK
LyP	CRELDON	WLB	GILFORD	WCB	KAMPVILLE
CyU	CRESTMEADE	WLO	GILLIAM	GrU	KANIMA

Pasture and Hayland Suitability Groups **Index to Soils**

phsg	soilname	phsg	soilname	phsg	soilname
GrP	KEENO	CyU	MALVERN	GrU	OLPE
WLO	KENMOOR	MDU	MANDEVILLE	WCB	ONAWA
WLO	KENNEBEC	GrU	MANO	ShU	OPEQUON
CyU	KENOMA	WtP	MAPLEWOOD	GNS	OPEQUON
WLO	KENRIDGE	WCU	MARION	WLO	ORION
CyU	KESWICK	LyU	MARSHALL	WCB	OSAGE
LyO	KICKAPOO	CyU	MAYES	MDU	OSKA
GrP	KILLARNEY	WCB	MCGIRK	WLB	OTTER
WCU	KILWINNING	WLO	MCPAUL	LyP	PAINTBRUSH
WLO	KLUM	WLB	MELVIN	WCB	PARKVILLE
ShU	KNOBBY	LyU	MEMPHIS	CyU	PARSONS
MDU	KNOBTOP	LyU	MENFRO	WLO	PAXICO
LyU	KNOX	CyU	MEXICO	LyU	PEMBROKE
WCB	KOBEL	WLB	MHOON	WCB	PERCIVAL
CyU	LADOGA	GrO	MIDCO	LyU	PERIDGE
GNS	LAFE^1	LyU	MINDEN	CyU	PERSHING
CyU	LAGONDA	LyU	MINNITH	WLB	PIOPOLIS
WCB	LAMINE	WLO	MODALE	SyO	PLAINFIELD
CyU	LAMONI	ShU	MOKO	WtP	PLATO
LyU	LAMOTTE	GNS	MOKO	CyU	POLO
LyO	LANDES	WLB	MONTEAU	LyO	POPE
WLO	LANDES	LyU	MONONA	WCB	PORTAGE
WLB	LANTON	WLO	MOTARK	WCB	PORTAGEVILLE
WLO	LANTON	WLO	MOVILLE	LyU	PORTIA
WLO	LAWSON	WCB	MULDROW	GrU	POYNOR
LyP	LEBANON	WCB	MYRICK	GNS	POYNOR
LyO	LECOMA	CyU	MYSTIC	CyU	PURDIN
LyU	LENZBURG	WCB	NAMEOKI	CyU	PUTCO
GrU	LENZBURG	LyO	NAPIER	WCU	PUTNAM
GNS	LENZBURG	WtP	NEEDLEYE	WCB	QUARLES
WCU	LEONARD	LyO	NEEPER	LyO	RACKET
WCU	LESLIE	WLO	NEVIN	WLO	RACKET
WCB	LETA	WLO	NEWARK	WLB	RACoon
WCB	LEVASY	MDU	NEWCOMER	WLO	RADLEY
CyU	LIBERAL	LyU	NEWTONIA	ShU	RAMSEY
WCB	LIGHTNING	GrU	NIANGUA	GNS	RAMSEY
WLO	LILBOURN	LyP	NICHOLSON	ShU	RANACKER
MDU	LILY	GrP	NIXA	LyO	RAZORT
LyU	LINDLEY	GrU	NOARK	WLO	REELFOOT
WLO	LINDSIDE	WLO	NODAWAY	MDU	REGER
LyO	LOMAX	LyO	NOLIN	SyO	RELFE
LyP	LORING	LyO	NORBORNE	WCU	RINDA
WCU	LOUGHBORO	ShU	NORRIS	GrU	RIVERTON
CyU	LOWELL	MDU	NOWATA	WCB	ROELLEN
LyU	LULA	GrU	OCIE	GrU	ROSELAND
WCB	LUTON	GNS	OCIE	CyU	ROSENDALE
CyU	MACEDONIA	WCB	OKAW	LyO	ROSS
CyU	MACKSBURG	CyU	OKEMAH	GrU	RUETER
SyO	MALDEN	WLO	OLMITZ	WCU	RUSHVILLE

**Pasture and Hayland Suitability Groups
Index to Soils**

phsg	soilname	phsg	soilname	phsg	soilname
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GrU	SAFFELL	WLO	STEELE	GrO	WABEN
WLO	SALIX	LyO	STURKIE	WLO	WAKELAND
WCU	SAMPSEL	CyU	SUMMIT	LyU	WAKENDA
LyO	SANDBUR	GrU	SWISS	WCB	WALDRON
WLO	SANDOVER	MDU	SYENITE	LyU	WANDA
SyO	SARPY	WCB	TANGLENOOK	WLB	WARDELL
WLB	SAWMILL	ShU	TAUMSAUK	WLO	WAUBONSIE
GrP	SCHOLTEN	WLO	TICE	WLB	WAVERLY
LyU	SCHULINE	LyU	TIMULA	LyP	WEINGARTEN
SyO	SCOTCO	WCB	TINA	WCU	WEIR
LyO	SECESH	WLO	TIPTONVILLE	CyU	WELLER
CyU	SEDALIA	LyP	TONIT	WLO	WESTERVILLE
LyO	SENSABAUGH	LyO	TOWOSAHGY	SyO	WIDEMAN
CyU	SEYMOUR	WLB	TUCKERMAN	WLO	WILBUR
CyU	SHADYGROVE	WCB	TUNICA	GrP	WILDERNESS
WLO	SHANNONDALE	WCB	TUSKEEGO	LyU	WINFIELD
WCB	SHARKEY	WLB	TWOMILE	CyU	WINNEGAN
WLO	SHARON	LyP	UNION	WCU	WINTERSET
CyU	SHARPSBURG	WLB	URICH	WLO	WIOTA
LyU	SHELBY	MDU	VANMETER	CyU	WOODSON
LyU	SIBLEY	WLO	VERDIGRIS	GrU	YANUSH
WLB	SIKESTON	WLB	VESSER	LyP	YELTON
WLO	SILVERDALE	CyU	VIBURNUM	CyU	ZAAR
WCU	SMILEYVILLE	GrU	VIBURNUM	WLB	ZACHARY
MDU	SNEAD	WLO	VIGAR	WCB	ZOOK
ShU	SOGN	LyP	VIRATON		
WLO	SPEED	WCB	WABASH		

Pasture and Hayland Suitability Groups

Group WCB - Wet Clayey Bottom**Criteria**

No fragipans
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 very poor to somewhat poor
 Particle size class
 CLAYEY
 CLAYEY OVER LOAMY
 CLAYEY OVER SANDY OR SANDY-SKELETAL
 FINE
 VERY-FINE
 Physiography
 terrace and flood plain
 AWC
 low to very high
 Permeability
 very slow to moderately slow

Soils

ACADIA	DARWIN	NAMEOKI
AHOLT	DUNNING	OKAW
ALBATON	FORESTDALE	ONAWA
ALLEMANDS	GIFFORD	OSAGE
ALLIGATOR	HARTVILLE	PARKVILLE
ARBELA	HOULKA	PERCIVAL
AUXVASSE	HUMESTON	PORTAGE
BALDWIN	HURST	PORTAGEVILLE
BLASE	JACKPORT	QUARLES
BLENCOE	KAMPVILLE	ROELLEN
BOOKER	KOBEL	SHARKEY
BOWDRE	LAMINE	TANGLENOOK
BREMER	LETA	TINA
CAIRO	LEVASY	TUNICA
CARLOW	LIGHTNING	TUSKEEGO
CHARITON	LUTON	WABASH
CHEQUEST	MCGIRK	WALDRON
COOTER^1	MULDROW	ZOOK
CROWLEY	MYRICK	

Pasture and Hayland Suitability Groups

Group WCU - Wet Clayey Upland**Criteria**

No fragipans
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 very poor to somewhat poor
 Particle size class
 CLAYEY
 CLAYEY OVER LOAMY
 CLAYEY OVER SANDY OR SANDY-SKELETAL
 FINE
 VERY-FINE
 Physiography
 upland
 AWC
 low to very high
 Permeability
 very slow to moderately slow

Soils

BELINDA
 CARYTOWN
 CHAUNCEY
 CLARINDA
 EDINA
 EDINBURG
 GLENSTED

HAIG
 KILWINNING
 LEONARD
 LESLIE
 LOUGHBORO
 MARION
 PUTNAM

RINDA
 RUSHVILLE
 SAMPSEL
 SMILEYVILLE
 WEIR
 WINTERSET

Pasture and Hayland Suitability Groups

Group WLB - Wet Loamy Bottom**Criteria**

No fragipans
 Bedrock deeper than 40"
 Slope less than 35%
 Drainage very poor to poor
 Particle size class
 COARSE-LOAMY
 COARSE-SILTY
 FINE-LOAMY
 FINE-SILTY
 Physiography
 flood plains and terraces
 AWC low to very high
 Permeability very slow to moderately slow

Soils

ADLER
 AMAGON
 ATKINS
 BEAUCOUP
 BLACKOAR
 CALHOUN
 COLAND
 COLO
 EXCELLO
 FOUNTAIN

GIDEON
 GILFORD
 HAYTI
 LANTON
 MELVIN
 MHOON
 MONITEAU
 OTTER
 PIOPOLIS
 RACoon

SAWMILL
 SIKESTON
 TUCKERMAN
 TWOMILE
 URICH
 VESSER
 WARDELL
 WAVERLY
 ZACHARY

Pasture and Hayland Suitability Groups

Group WLO - Wet Loamy Overflow**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 somewhat poor to moderately well, well
 Particle size class
 COARSE-LOAMY, COARSE-LOAMY OVER CLAYEY
 COARSE-SILTY, COARSE-SILTY OVER CLAYEY
 FINE-LOAMY
 FINE-SILTY
 SANDY OVER CLAYEY
 SANDY OVER LOAMY
 Physiography
 terraces and flood plains
 AWC
 moderate to very high
 Permeability
 very slow to moderately rapid

Soils

ACKMORE	HEPLER	PAXICO
AMANA	HONTAS	RACKET
BELKNAP	HOOPESTON	RADLEY
BLAKE	JUDSON	REELFOOT
CALEB	KENMOOR	SALIX
CANTRIL	KENNEBEC	SANDOVER
CARUTHERSVILLE	KENRIDGE	SHANNONDALE
COLLINS	KLUM	SHARON
COMMERCE	LANDES	SILVERDALE
CONVENT	LANTON	SPEED
DOCKERY	LAWSON	STEELE
DUNDEE	LILBOURN	TICE
DUPO	LINDSIDE	TIPTONVILLE
EUDORA	MCPAUL	VERDIGRIS
FALAYA	MODALE	VIGAR
FARRENBURG	MOTARK	WAKELAND
FATIMA	MOVILLE	WAUBONSIE
FISHPOT	NEVIN	WESTERVILLE
FLORIS	NEWARK	WILBUR
FREEBURG	NODAWAY	WIOTA
GILLIAM	OLMITZ	
HAYNIE	ORION	

Pasture and Hayland Suitability Groups

Group LyO - Loamy Overflow**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 well to excessively well
 Particle size class
 COARSE-LOAMY
 COARSE-SILTY
 COARSE-SILTY OVER SANDY OR SANDY-SKELETAL
 FINE-LOAMY
 FINE-LOAMY OVER SANDY OR SANDY-SKELETAL
 FINE-SILTY
 LOAMY
 Physiography
 terraces and flood plains
 AWC
 low to very high
 Permeability
 moderately slow to moderately rapid

Soils

ANKENY	GLADDEN	NEEPER
ASHTON	GRABLE	NOLIN
BEULAH	HAYMOND	NORBORNE
BOSKET	HEALING	POPE
BROSELEY	HUNTINGTON	RACKET
CARR	HUNTSVILLE	RAZORT
CLAIBORNE	JEMERSON	ROSS
CLEORA	KAINTUCK	SANDBUR
COTTER	KICKAPOO	SECESH
DAMERON	LANDES	SENSABAUGH
DUBBS	LECOMA	STURKIE
ELK	LOMAX	TOWOSAHGY
EUDORA	NAPIER	

Pasture and Hayland Suitability Groups

Group SyO - Sandy Overflow**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 excessive
 Particle size class
 SANDY
 SANDY-SKELETAL
 Physiography
 terraces and flood plains
 AWC
 very low to moderate
 Permeability
 moderate to rapid

Soils

BUCKNEY
 CANALOU^1
 CLANA
 CREVASSE

DIEHLSTADT^1
 HODGE
 MALDEN
 PLAINFIELD

RELFE
 SARPY
 SCOTCO
 WIDEMAN

Pasture and Hayland Suitability Groups

Group GrO - Gravelly Overflow**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage

 Particle size class
 LOAMY-SKELETAL
 Physiography
 terraces and flood plains
 AWC
 very low to high
 Permeability
 moderately slow to moderately rapid

Soils

BLOOMSDALE
 CEDARGAP

ELSAH
 MIDCO

WABEN

Pasture and Hayland Suitability Groups

Group LyU - Loamy Upland**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 somewhat poor to well
 Particle size class
 COARSE-LOAMY
 COARSE-SILTY
 FINE-LOAMY
 FINE-SILTY
 Physiography
 upland
 AWC
 moderate to very high
 Permeability
 moderately slow to moderate
 Surface texture
 does not have any coarse fragments

Soils

ALVIN
 ASKEW
 BRANDON
 BRANSON
 BRITWATER
 BUNCETON
 CONTRARY
 CRIDER
 DEEPWATER
 EXIRA
 FOURCHE
 GARA
 HARVESTER
 HIGGINSVILLE

HOLSTEIN
 IDA
 IVA
 JASPER
 JOY
 KNOX
 LAMOTTE
 LENZBURG
 LINDLEY
 LULA
 MARSHALL
 MEMPHIS
 MENFRO
 MINDEN

MINNITH
 MONONA
 NEWTONIA
 PEMBROKE
 PERIDGE
 PORTIA
 SCHULINE
 SHELBY
 SIBLEY
 TIMULA
 WAKENDA
 WANDA
 WINFIELD

Pasture and Hayland Suitability Groups

Group CyU - Clayey Upland**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 somewhat poor to well
 Particle size class
 CLAYEY
 FINE
 VERY-FINE
 Physiography
 upland
 AWC
 low to high
 Permeability
 very slow to moderate
 Surface texture does not have any coarse fragments

Soils

ADAIR
 ADCO
 ALSUP
 ARISPE
 ARMSTER
 ARMSTRONG
 BARDEN
 BEEMONT
 BEVIER
 BLUELICK
 BRAZILTON
 BREVATOR
 BRONAUGH
 BUCKLICK
 CALWOODS
 CHEROKEE
 CLINTON
 COTTON
 COURTOIS

CRESTMEADE
 GORIN
 GREENTON
 GRUNDY
 HARTWELL
 HERRICK
 KENOMA
 KESWICK
 LADOGA
 LAGONDA
 LAMONI
 LIBERAL
 LOWELL
 MACEDONIA
 MACKSBURG
 MALVERN
 MAYES
 MEXICO
 MYSTIC

OKEMAH
 PARSONS
 PERSHING
 POLO
 PURDIN
 PUTCO
 ROSENDALE
 SEDALIA
 SEYMOUR
 SHADYGROVE
 SHARPSBURG
 SUMMIT
 VIBURNUM
 WELLER
 WINNEGAN
 WOODSON
 ZAAR

Pasture and Hayland Suitability Groups

Group GrU - Gravelly Upland**Criteria**

No fragipan
 Bedrock
 deeper than 40"
 Slope
 less than 35%
 Drainage
 moderately well to excessively well
 Particle size class
 CLAYEY
 CLAYEY-SKELETAL
 FINE
 FINE-LOAMY
 LOAMY-SKELETAL
 LOAMY-SKELETAL OVER CLAYEY
 VERY-FINE
 Physiography
 upland
 AWC
 very low to moderate
 Permeability

Soils

AGNOS	ELDON	OLPE
ALSUP	ELDORADO	POYNOR
ARMSTER	GEPP	RIVERTON
BEEMONT	GOSS	ROSELAND
BETHESDA	HAILEY	RUETER
BRUSSELS	KANIMA	SAFFELL
CLARKSVILLE	LENZBURG	SWISS
COULSTONE	MANO	VIBURNUM
COURTOIS	NIANGUA	YANUSH
CRAIG	NOARK	
DONIPHAN	OCIE	

Pasture and Hayland Suitability Groups

Group MDU - Moderately Deep Upland**Criteria**

No fragipans
 Bedrock
 deeper than 20" and less than 40"
 Slope
 less than 35%
 Drainage
 moderately well to somewhat excessive
 Particle size class
 Physiography
 upland
 AWC
 very low to moderate
 Permeability
 very slow to moderately rapid

Soils

BARCO
 BARDLEY
 BATES
 BENDAVIS
 BENDER
 BLUEYE
 BOLIVAR
 CABOOL
 CANEYVILLE

CATOOSA
 CHILHOWIE
 CLARESON
 ERAM
 GATEWOOD
 GOSPORT
 IRONDALE
 KNOBTOP
 LILY

MANDEVILLE
 NEWCOMER
 NOWATA
 OSKA
 REGER
 SNEAD
 SYENITE
 VANMETER

Pasture and Hayland Suitability Groups

Group ShU - Shallow Upland**Criteria**

No fragipans
 Bedrock
 less than 20"
 Slope
 less than 35%
 Drainage
 well to somewhat excessive
 Particle size class
 CLAYEY
 CLAYEY-SKELETAL
 LOAMY
 LOAMY-SKELETAL
 Physiography
 uplands and none flooded terraces
 AWC
 very low
 Permeability
 slow to rapid

Soils

BALLTOWN
 BASEHOR
 COLLINSVILLE
 COWETA
 GASCONADE

HECTOR
 KNOBBY
 MOKO
 NORRIS
 OPEQUON

RAMSEY
 RANACKER
 SOGN
 TAUMSAUK

Pasture and Hayland Suitability Groups

Group LyP - Loamy Pan**Criteria**

Fragipan or fragic properties
 Bedrock
 generally greater than 20"
 Slope
 less than 35%
 Drainage
 moderately well and well
 Particle size class
 FINE
 FINE-LOAMY
 FINE-SILTY
 Physiography
 upland
 AWC
 low to high
 Permeability
 very slow to moderately slow

Soils

BAHNER
 CAPTINA
 CRELDON
 DELASSUS
 FOLEY
 GUNLOCK
 HATTON

HILDEBRECHT
 HOBERG
 HOBSON
 JONCA
 LEBANON
 LORING
 NICHOLSON

PAINTBRUSH
 TONTI
 UNION
 VIRATON
 WEINGARTEN
 YELTON

Pasture and Hayland Suitability Groups

Group WtP - Wet Pan**Criteria**

Fragipan or fragic properties
 Bedrock
 generally greater than 20"
 Slope
 less than 35%
 Drainage
 somewhat poor and poor
 Particle size class
 CLAYEY
 FINE
 FINE-SILTY
 Physiography
 upland
 AWC
 low to high
 Permeability
 very slow to moderately slow

Soils

BADO
 CELT
 CLARKSFORK

FRIENDLY
 GERALD
 MAPLEWOOD

NEEDLEYE
 PLATO

Pasture and Hayland Suitability Groups

Group GrP - Gravelly Pan**Criteria**

Fragipan or fragic properties
 Bedrock
 generally greater than 20"
 Slope
 less than 35%
 Drainage
 moderately well
 Particle size class
 LOAMY-SKELETAL
 Physiography
 upland
 AWC
 very low to moderate
 Permeability
 very slow to slow

Soils

KEENO
 KILLARNEY

NIXA
 SCHOLTEN

WILDERNESS

Pasture and Hayland Suitability Groups**Group GNS - Generally Not Suited****Criteria**

Slopes greater than or equal to 35% or have other properties not suitable for pasture and hayland production

Soils

BARDLEY
BENDER
BRUSSELS
CLARKSVILLE
COULSTONE
EUSTIS¹

GASCONADE
GATEWOOD
GEPP
HAILEY
HAMBURG
LAFE¹

LENZBURG
MOKO
OCIE
OPEQUON
POYNOR
RAMSEY

¹ - These soils had properties that do not meet the criteria of the group but will manage similarly to the soils within the group.